

# THE JOURNAL OF GENERAL MICROBIOLOGY

EDITED FOR  
THE SOCIETY FOR GENERAL MICROBIOLOGY

## *Editors*

J. R. POSTGATE  
E. A. DAWES    S. W. GLOVER    M. F. MADELIN

## *Editorial Board*

J. R. BAKER	M. T. HEYDEMAN	M. H. RICHMOND
B. A. BRIDGES	P. N. HOBSON	C. F. ROBERTS
R. J. W. BYRDE	R. KNOX	J. A. ROPER
M. J. CARLILE	S. P. LAPAGE	A. H. ROSE
S. T. COWAN	J. W. LIGHTBOWN	J. G. SCAIFE
T. CROSS	P. MEADOW	D. A. SMITH
P. J. DART	E. O. MORRIS	I. W. SUTHERLAND
N. DATTA	I. MORRIS	D. W. TEMPEST
T. H. FLEWETT	J. G. MORRIS	A. P. J. TRINCI
J. L. GAY	M. O. MOSS	P. J. WHITE
N. G. HEATLEY	J. H. PEARCE	R. WHITTENBURY
M. S. HENDRIE	C. RATLEDGE	K. S. ZINNEMANN

VOLUME 69, 1971

CAMBRIDGE  
AT THE UNIVERSITY PRESS  
1971

PUBLISHED BY THE CAMBRIDGE UNIVERSITY PRESS

Bentley House, 200 Euston Road, London, NW1 2DB

American Branch: 32 East 57th Street, New York, N.Y. 10022

*Printed in Great Britain at the University Printing House, Cambridge*

## Contents

### Part 1 issued November 1971

	PAGE
Effects of Organochlorine Insecticides on Bacterial Growth, Respiration and Viability. By P. W. TRUDGILL, R. WIDDUS and J. S. REES . . . . .	I
The Effects of Technical Chlordane on Energy Metabolism of <i>Bacillus subtilis</i> . By R. WIDDUS, P. W. TRUDGILL and M. J. MALISZEWSKI . . . . .	15
The Effects of Technical Chlordane on Growth and Energy Metabolism of <i>Strepto-</i> <i>coccus faecalis</i> and <i>Mycobacterium phlei</i> : a Comparison with <i>Bacillus subtilis</i> . By R. WIDDUS, P. W. TRUDGILL and D. C. TURNELL . . . . .	23
Numerical Taxonomy of Some Nocardioform Bacteria. By M. GOODFELLOW . . . . .	33
Repair of Wall Damage in <i>Escherichia coli</i> Recovered from an Aerosol. By P. HAMBLETON . . . . .	81
Transmissible Plasmid Factors and Fertility Inhibition in <i>Vibrio cholerae</i> . By K. BHASKARAN and V. B. SINHA . . . . .	89
The Effect of T <sub>1</sub> Antigen on the Virulence of Salmonella Strains for Mice. By V. V. VALTONEN, M. SARVAS and P. H. MÄKELÄ . . . . .	99
The Effect of Lipopolysaccharide Modifications – Antigenic Factors 1,5,12 <sub>2</sub> and 27 – on the Virulence of Salmonella Strains for Mice. By V. V. VALTONEN and P. H. MÄKELÄ . . . . .	107 ✓
Some Effects of Streptomycin on <i>Pseudoperonospora humili</i> , the Downy Mildew of Hop. By M. J. GRIFFIN and J. R. COLEY-SMITH . . . . .	117
Molar Growth Yields of Yeasts in Anaerobic Batch Cultures. By A. D. HAUKELI and S. LIE . . . . .	135

#### SHORT COMMUNICATION

An Immunological Study of the <i>Neurospora am</i> Mutants using Antibodies Prepared against Glutamate Dehydrogenase Subunits. By D. B. ROBERTS . . . . .	143
--	-----

### Part 2 issued December 1971

Regulation of Cellulase Production by <i>Myrothecium verrucaria</i> Grown on Non- cellulosic Substrates. By M. A. HULME and D. W. STRANKS . . . . .	145
The Influence of Phosphate and Other Nutrients on the Development of Vesicular- arbuscular Mycorrhiza in Culture. By B. MOSSE and J. M. PHILLIPS . . . . .	157
DNA Base Composition of Gram-positive Cocci. By M. KOCUR, T. BERGAN and N. MORTENSEN . . . . .	167
The Production of Conidiophores and Conidia by Newly Germinated Conidia of <i>Aspergillus niger</i> (Microcycle Conidiation). By J. G. ANDERSON and J. E. SMITH . . . . .	185



	PAGE
Light-induced Encystment of <i>Blastocladiella emersonii</i> Zoospores. By E. C. CANTINO and L. C. TRUESDELL . . . . .	199
Determination of Sterol Requirement for Mycoplasmatales. By D. G. FF. EDWARD	205
The Growth of <i>Peronospora farinosa</i> f.sp. <i>betae</i> and Sugar Beet Callus Tissues in Dual Culture. By D. S. INGRAM and I. JOACHIM . . . . .	211
Studies on Polyol Function in <i>Aspergillus clavatus</i> : a role for Mannitol and Ribitol. By D. L. CORINA and K. A. MUNDAY . . . . .	221
Transfer of Tetracycline-resistance between Strains of <i>Staphylococcus aureus</i> in Mixed Cultures. By R. W. LACEY . . . . .	229
Autoradiographic Estimation of Competence and the Relationship between Competence and Transformability in Cultures of <i>Bacillus subtilis</i> . By C. A. VERMEULEN and G. VENEMA . . . . .	239
Growth of Unicellular Forms of the Fungus <i>Cordyceps militaris</i> and Analysis of the Chemical Composition of their Walls. By D. B. MARKS, B. J. KELLER and A. J. GUARINO . . . . .	253
A Quantitative Survey of Conidiation Mutants in <i>Aspergillus nidulans</i> . By S. D. MARTINELLI and A. J. CLUTTERBUCK . . . . .	261
A New Method for the Preparation and Some Properties of Staphylococcal Delta-haemolysin. By N. G. HEATLEY . . . . .	269
Deoxyribonucleic Acid Base Composition of <i>Staphylococcus epidermidis</i> and its Phages. By J. VERHOEF, A. J. HOFF, B. HOLTRIGTER and A. C. M. VAN DER DRIFT	279

## SHORT COMMUNICATIONS

Base Composition and Genome Size of <i>Mycoplasma meleagridis</i> Deoxyribonucleic Acid. By T. C. ALLEN . . . . .	285
The Lipid Content of <i>Bacillus stearothermophilus</i> at 37° and at 55°. By K. C. OO and K. L. LEE . . . . .	287

## Part 3 issued December 1971

Properties of Isoleucine Hydroxamate-resistant Mutants of <i>Serratia marcescens</i> . By M. KISUMI, S. KOMATSUBARA, M. SUGIURA and I. CHIBATA . . . . .	291
Asparaginase and Glutaminase Activities of Bacteria. By H. E. WADE, H. K. ROBINSON and B. W. PHILLIPS . . . . .	299
The Walls of <i>Mycobacterium lepraemurium</i> : Chemistry and Ultrastructure. By P. DRAPER . . . . .	313
Regeneration of <i>Aspergillus nidulans</i> Protoplasts. By J. F. PEBERDY and R. K. GIBSON . . . . .	325
Pyruvic Acid and Formic Acid Metabolism in <i>Sarcina ventriculi</i> and the Role of Ferredoxin. By M. P. STEPHENSON and E. A. DAWES . . . . .	331
A New <i>Salmonella typhimurium</i> DNA Host Specificity. By C. COLSON and A. M. COLSON . . . . .	345

	PAGE
Genetic Control of Fertility in <i>Streptomyces coelicolor</i> A3(2): Plasmid Involvement in the Interconversion of UF and IF Strains. By A. VIVIAN . . . . .	353
Absence of Polar Effect of Frameshift Mutations in the <i>E</i> Gene of the <i>Escherichia coli</i> argECBH Cluster. By S. BAUMBERG and E. ASHCROFT . . . . .	365
A Comparison of Respiratory Processes in <i>Spirillum volutans</i> , <i>Spirillum itersonii</i> and <i>Spirillum serpens</i> . By J. A. COLE and S. C. RITTENBERG . . . . .	375
Haem Biosynthesis from [ <sup>14</sup> C]- $\delta$ -Aminolaevulinic Acid in Laboratory-grown and Root Nodule <i>Rhizobium lupini</i> . By C. A. GODFREY and M. J. DILWORTH . . . . .	385
Trisporic Acid Production by <i>Blakeslea trispora</i> and its Promotion by Barbiturate. By J. D. BU'LOCK and D. J. WINSTANLEY . . . . .	391
The Influence of Dissolved Oxygen on <i>Pseudomonas</i> AM1 Grown on Methanol in Continuous Culture. By D. G. MACLENNAN, J. C. OUSBY, R. B. VASEY and N. T. COTTON . . . . .	395
High-frequency Gene Transfer in <i>Pasteurella pseudotuberculosis</i> . By P. C. McMAHON . . . . .	405
Discharge of Conidia of <i>Entomophthora thaxteriana</i> Petch from the Pea Aphid <i>Acyrtosiphon pisum</i> Harris. By N. WILDING . . . . .	417

## SHORT COMMUNICATIONS

Inactivation <i>In vivo</i> of Glutamine Synthetase and NAD-specific Glutamate Dehydrogenase: Its Role in the Regulation of Glutamine Synthesis in Yeasts. By A. R. FERGUSON and A. P. SIMS . . . . .	423
Effect of Growth Temperature on Cold Osmotic Shock in <i>Escherichia coli</i> ML30. By J. W. PATCHING and A. H. ROSE . . . . .	429
Effect of Varying Growth Rate on the Morphology of <i>Arthrobacter</i> . By B. M. LUSCOMBE and T. R. G. GRAY . . . . .	433
Books Received . . . . .	
Proceedings of the Third Meeting of the North West European Microbiological Group at Utrecht on 16-18 August 1971 . . . . .	i

